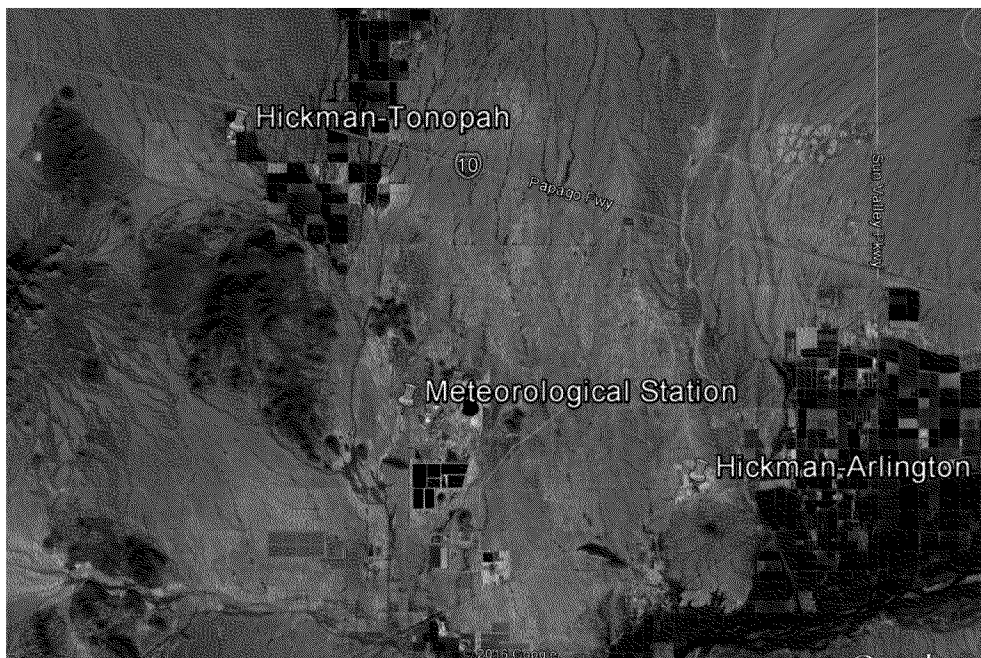


## Summary of NH<sub>3</sub> and H<sub>2</sub>S preliminary Modeling for Hickman

### 1. Location of Facilities



### 2. Emissions Estimation

Emissions of NH<sub>3</sub>

Birds	No. of birds data are from: Court document Case 2:16-cv-03319-LZB	Emission Factor (g /day/head)	Emision Rate (g /day)	Emission Rate (g/s)
Tonopah	3072000 (hens)	0.282	866,304	10.027
Arlington	3718244 (hens)	0.282	1,048,545	12.136
	2157917 (pullets)	0.282	608,533	7.043

Emission factors are from: Ji-Qin Ni, Claude A. Diehl, Li-Long Chai, Bill W. Bogan, Erin L. Cortus, Teng Teeh Lim, and A.J. Heber. 2010. National Air Emissions Monitoring Study: Emissions Data from Two Manure Belt Layer Houses in Indiana - Site IN2B. Final Report. Purdue University, West Lafayette, IN, July 2.

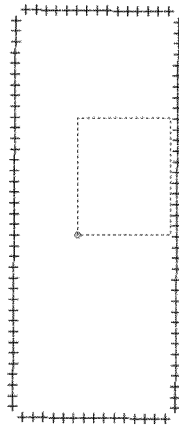
	No. of birds	Emission Factor (mg /day/head)	Emision Rate (g /day)	Emission Rate (g/s)
Tonopah	3072000 (hens)	2	6,144	0.071
Arlington	3718244 (hens)	2	7,436	0.086
	2157917 (pullets)	2	4,316	0.050

### 3. Meteorological Data

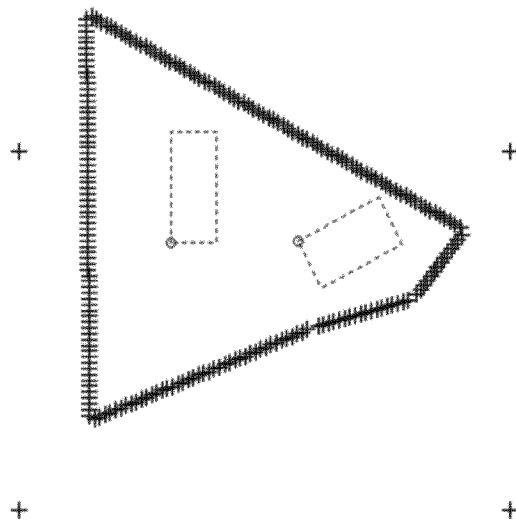
Five-years of meteorological data collected from Palo Verde Nuclear Power Plant

### 4. Source Layout and release parameters

Tonopah Facility: Modeled as an area source with a release height of 1.5 m

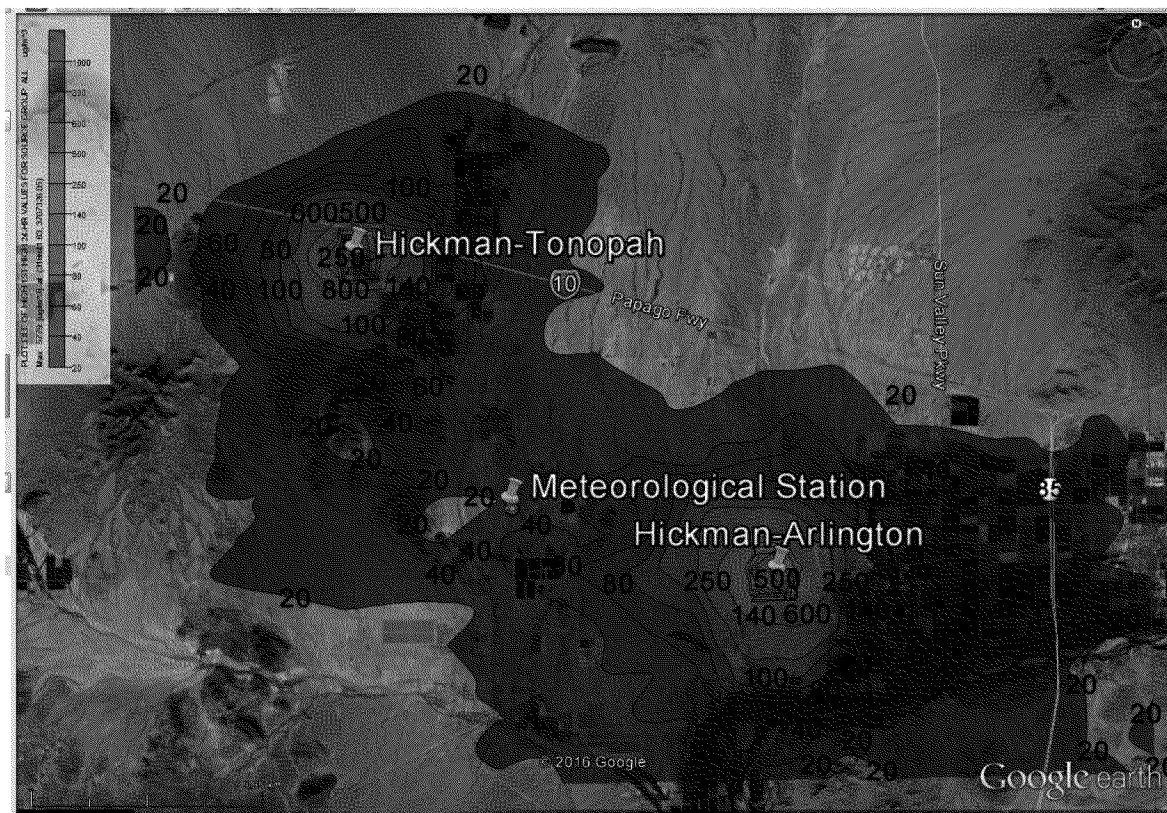


Arlington Facility: Modeled as two area sources with a release height of 1.5 m



NOTE: due to the lack of detailed source information, the parameters were simplified

## 5. Results of NH<sub>3</sub> Concentrations



### 24-hour Concentration

AAAQG Standard: 140  $\mu\text{g}/\text{m}^3$ , 24 hour

MRL (Minimal Risk Level): 1.7 ppm (1,224  $\mu\text{g}/3$ ), derived for acute-duration inhalation exposure (14 days or less)

Maximum modeled 24-hour concentration at fenceline: 5,780  $\mu\text{g}/\text{m}^3$  (fenceline of the Tonopah facility)

Maximum modeled 24-hour concentration at the nearest residential area: ~ 300  $\mu\text{g}/\text{m}^3$  (1.2 km east side of the Tonopah facility).

## 6. Results of H<sub>2</sub>S Concentration



H<sub>2</sub>S standard: 0.03 ppm (30 ppb = 42  $\mu\text{g}/\text{m}^3$ ), 30 minutes, occupied space

Maximum modeled 1-hour concentration at fenceline: 254  $\mu\text{g}/\text{m}^3$  (fenceline of the Tonopah facility)

Maximum modeled 1-hour concentration at the nearest residential area: ~ 60  $\mu\text{g}/\text{m}^3$  (1.2 km east side of the Tonopah facility).